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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/512,058 | NOMURA ET AL. | |
| | Examiner | Art Unit | |
| | SAID BROOME | 2628 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *27 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-4,6,7,10-21,23-26 and 33-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,7,10-21,23-26 and 33-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/3/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

1. This office action is in response to an amendment filed on 8/27/2008.

2. Claims 1, 11, 12, 16, 19, 20, 25, 26 and 33 have been amended by the applicant.

3. Claims 2-4, 6, 7, 10, 13-15, 17, 18, 21, 23, 24 and 34-36 are original.

4. Claims 5, 8, 9, 22 and 27-32 have been cancelled.

5. Claims 37-46 have been added.

### *Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 18 and 19 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled "Clarification of 'Processes' under 35 U.S.C. 101"). The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example, the image data reproduction method of claims 18 and 19

generate multimedia information files, however, the methods fail to tie the steps of the method to an apparatus or system in which to perform the method.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 6, 7, 12, 14-16, 20, 23, 24 and 33-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swift (US Patent 6,765,568) in view of Osaka et al. (hereinafter "Osaka", US Patent 6,023,277).

Regarding claim 1, Swift teaches an image data generation apparatus (col. 5 lines 21-23: "*…computer 102…used to display...stereo image…*") comprising:

reception means for receiving a parameter for displaying three-dimensional image data (col. 3 lines 24-26 - 47-50: "*…a...file format...of the original left and right is known, as designated by the tag within the...file…*" and col. 7 lines 51-57: "*The...system takes a Stereoscopic Media File...saves a local copy in...the display method selected…*", *where the system accepts a file and therefore contains a reception means to retrieve and save the file*), including information data indicating one of a plurality of predetermined camera arrangements of a plurality of cameras which has picked up the three dimensional image data, said one of a plurality of camera arrangements describing a placement of said plurality of cameras relative to each other during image pickup (col. 9 lines 55-62: "*…store a series of N images into a...file...the point of view of the camera is swung*

*around the object to generate…the…images.*", *where a file stores an object imaged from a plurality of relative camera view points that are initialized and saved by the user,* col. 10 lines 52-62: "*Another embodiment allows…views to be generated to simulate a…camera…The amount of adjustment can be selected by the user to suit their viewing condition and capabilities.*", *therefore the file utilizes a camera parameter, in which the placement of the cameras in their relative positions is also provided, as illustrated in* Fig 19: *1908, 1906*) and at least one of information data indicating a method of generating three-dimensional image data from data of the picked up image and information data for controlling presentation of the three-dimensional image data (col. 2 lines 28-41: "*The preferred embodiment…provides a single format with independent right and left channels…to represent the stereoscopic media…it provides a means of displaying stereoscopic media…it provides automatic and manual optimization adjustments such as parallax shift adjustment…to the stereoscopic media based on viewing hardware…for optimal viewing quality.*", *where information is provided that controls how the three-dimensional image data is presented*);

three-dimensional image display control information generation means for generating three-dimensional image display control information by encoding said parameter (col. 4 lines 6-11: "*The encoding processes used include independent compression of the Left and Right images. Independent compression of Left and Right provides better quality display output…methods include a video setup format for compression…Several tools are used…These include…a stereo compression analysis tool to detect if the stereo information is preserved after compression.*" and in col. 11 lines 12-16: "*If too much compression is applied, the image will loose its stereoscopic impact.*

*This embodiment provides a measure of the quality of the stereoscopic image that can be used to readjust the compression system.*", *where a parameter, or stereo information, that provides information regarding how to correctly display and align the stereoscopic images form corresponding left/right points of view, is encoded in the file*); and

file generation means for generating a multimedia information file based on both of said three-dimensional image display control information (col. 3 lines 24-26 and 47-50: "*…a single media file format that is converted to various display formats…the format of the original left and right is…designated by the tag within the…file…*", Fig. 1) and said three-dimensional image data (col. 8 lines 11-20: "*...a file structure is created to store and preserve various types of stereo media…This one file format can store multiple or single stereo/non-stereo media elements. FIG. 10 illustrates a VRR file 1000 that may contain…a…Stereoscopic Object Model…*", *where the stereoscopic media file also contains three-dimensional image data such as stereoscopic three-dimensional models*).

However, Swift fails to teach header control information added to a multimedia information file. Osaka teaches header control information (col. 5 lines 4-11: "*…information indicating…a three-dimensional display…is provided in the header of a file…this information is used to decide execution of a three-dimensional display, thereby making it possible to readily decide whether a three-dimensional display is to be executed…*", Fig. 12: element 51). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the display control information of Swift with the file header data of Osaka because this combination would provide encoded three-dimensional image data stored in a file as taught by Swift, in which the three-dimensional data file comprises a header control data, as taught by

Osaka, where data processing of the three-dimensional image data is thereby reduced through analysis of the header control information which indicates the dimensional complexity of the objects within the file without requiring the entire file to be accessed.

Regarding claim 2, Swift teaches a recording means for recording the multimedia file (col. 7 lines 51-54: "*The viewing system takes a Stereoscopic Media File...and saves a local copy...* ").

Regarding claim 3, Swift teaches the file generation means outputs said multimedia information file to an external communication path (col. 7 lines 49-54: "*There is an embodiment that saves and converts one format into another from the Internet using a local drive from original source. The viewing system takes a Stereoscopic Media File, displays it on the user side according to the user's display preferences, and saves a local copy...*").

Regarding claims 6 and 23, Swift teaches providing a particular file format (col. 3 lines 23-26: "*...the invention...includes a...media file format...*"), however Swift fails to teach indicating a file type by providing a different extension for the file when it is determined whether or not the file contains three-dimensional image data. Osaka teaches a file generation means indicates a file type by providing a different extension to said multimedia information file when said multimedia information file contains the three-dimensional image data and when said multimedia information file does not contain three-dimensional image data (col. 5 lines 4-11: "*...to provide a display control apparatus and a display control method in which paint information indicating whether a three-dimensional display is...provided in the header of a file...*"). The motivation to combine the teachings of Swift with Osaka is equivalent to the motivation of claim 1.

Regarding claims 7 and 24, Swift fails to teach the limitations. Osaka teaches that when said extension indicates that said multimedia information file contains three-dimensional image data, the extension further indicates which of the plurality of different three-dimensional display methods, with each display method being different from the other, is used to display said three-dimensional image data (col. 17 lines 26-41: "*…whether or not a three-dimensional image is to be displayed has been recorded as information in the header 51 and therefore the decision of step S64 is rendered promptly by making reference to this information…these processing operations may be executed by a file extension…If it is determined at step S64 that this window has a three-dimensional image file…the display driver 6 is controlled to present the three-dimensional display…on the basis of the three-dimensional image data obtained from the three-dimensional image data 52, the screen controller 9 controls the image painting unit 7 and the checkered mask-pattern painting unit 8 and causes a three-dimensional display to be presented at the position of the window of the stereoscopic display 12.*"). The motivation to combine the teachings of Swift with Osaka is equivalent to the motivation of claim 1.

Regarding claim 12, Swift teaches an image data reproduction apparatus (col. 5 lines 21-23: "*…computer 102…used to display…stereo image…*", Fig. 2: element 102) comprising:

reception means for receiving a multimedia information file including both of three-dimensional image display control information (col. 2 lines 28-41: "*The preferred embodiment…provides a single format with independent right and left channels…to represent the stereoscopic media…it provides a means of displaying stereoscopic*

*media…it provides automatic and manual optimization adjustments such as parallax shift adjustment…to the stereoscopic media based on viewing hardware…for optimal viewing quality.*") and said three-dimensional image data (col. 8 lines 11-20: "*An embodiment supports a stereoscopic media file that contains sub-media. Specifically, a file structure is created to store and preserve various types of stereo media…This one file format can store multiple or single stereo/non-stereo media elements. FIG. 10 illustrates a VRR file 1000 that may contain…a Stereo Still Image 1004…Stereoscopic Object Model…*", *where the stereoscopic media file also contains three-dimensional image data*), generated by encoding a parameter for displaying three-dimensional image data and said three-dimensional image data, or two-dimensional image data (col. 4 lines 6-11: "*The encoding processes used include independent compression of the Left and Right images. Independent compression of Left and Right provides better quality display output…methods include a video setup format for compression…Several tools are used in the process. These include…a stereo compression analysis tool to detect if the stereo information is preserved after compression.*" and in col. 11 lines 12-16: "*If too much compression is applied, the image will loose its stereoscopic impact. This embodiment provides a measure of the quality of the stereoscopic image that can be used to readjust the compression system.*");

wherein the parameter including information data indicating one of a plurality of predetermined camera arrangements of a plurality of cameras which has picked up the three dimensional image data, said one of a plurality of camera arrangements describing a placement of said plurality of cameras relative to each other during image pickup (col. 9 lines 55-62: "*…store a series of N images into a…file…the point of view of the camera is*

*swung around the object to generate...the...images.*", *where a file stores an object imaged from a plurality of relative camera view points that are initialized and saved by the user,* col. 10 lines 52-62: "*Another embodiment allows...views to be generated to simulate a...camera...The amount of adjustment can be selected by the user to suit their viewing condition and capabilities.*", *therefore the file utilizes a camera parameter, in which the placement of the cameras in their relative positions is also provided, as illustrated in* Fig 19: *1908, 1906*), and information data indicating a method of generating three-dimensional image data from data of the picked up image and information data for controlling presentation of the said three-dimensional image data (col. 9 lines 53-62: "*One embodiment stores a series of 3D stereoscopic images of an object into...a...file...the point of view of the camera is swung around the object to generate all of the intermediate images.*" and in col. 2 lines 28-41: "*The preferred embodiment...provides a single format...to represent the stereoscopic media...it provides a means of displaying stereoscopic media...it provides automatic and manual optimization adjustments such as parallax shift adjustment...to the stereoscopic media based on viewing hardware...for optimal viewing quality.*");

file structure analysis means for analyzing a structure of said multimedia information file, such as the file format, so as to extract the three-dimensional image display control information and the three-dimensional image data (col. 3 lines 23-50: "*...the invention...includes a...media file format...to...display formats on the user side...support of auto-detection 3D stereo hardware systems...automatic...calibration /adjustments for physical 3D viewing mechanisms...and stereoscopic viewing that...as*

*designated by the tag within the Stereoscopic 3D Media file…*", *where the file format is analyzed to determine the associated display format*);

three-dimensional image display control information analysis means for analyzing said three-dimensional image display control information extracted by the file structure analysis and data reproduction means for reproducing said three-dimensional image data extracted by the file structure analysis (col. 3 lines 24-50: "*…it provides a single format with independent right and left channels…to represent the stereoscopic media…it provides automatic and manual optimization adjustments such as parallax shift adjustment, brightness control, color adjustment, and cross-talk reduction to the stereoscopic media…*", *in which the file format is analyzed to determine the display control data*);

data conversion means for converting reproduced three-dimensional image data, such that the three-dimensional image data can be presented in a display unit, based on a result of analysis by the three-dimensional image display control information analysis (col. 3 lines 24-26: "*…a single media file format that is converted to various display formats on the user side…*" and in col. 8 lines 45-63: "*Another embodiment allows for automatic detection of 3D display hardware…an appropriate display method can be automatically selected…Another embodiment automatically (or manually if desired) adjusts with overall left and right image shift…the 3D stereoscopic image is adjusted accordingly…*", *wherein based on the display device, the file format of the display control information is analyzed and is converted to the proper display control file format required to accurately display the three-dimensional data, thereby correctly reproducing the 3D media on the display*);

However, Swift fails to teach header control information. Osaka teaches header control information (col. 5 lines 4-11: "*…information indicating whether a three-dimensional display is possible…provided in the header of a file…this information is used to decide execution of a three-dimensional display, thereby making it possible to readily decide whether a three-dimensional display is to be executed…*"), where the display of the three-dimensional data produced with respect to the header information that is analyzed from the file (Fig. 12), in which one of ordinary skill in the art would have modified the teachings of Swift with Osaka because the three-dimensional image data comprised within the file disclosed by Swift (col. 8 lines 11-20: "*...a stereoscopic media file…a file structure is created to store and preserve various types of stereo media…This one file format can store…Stereoscopic Object Model…*"), would have been correctly analyzed through utilizing the information contained within the header control information disclosed by Osaka (col. 5 lines 4-11: "*…information indicating…a three-dimensional display is…provided in the header of a file…this information is used to decide execution of a three-dimensional display, thereby making it possible to readily decide whether a three-dimensional display is to be executed…*") due to the efficient retrieval of three-dimensional display control analysis provided by the access of the header control information that corresponds to the file. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the three-dimensional data file of Swift with the file header information of Osaka because this modification would provide the ability to display stereoscopic images stored in a particular display format on any display device, as taught by Swift, in which the display control processing is reduced through the indication of the presence of three-dimensional

data within the file, as taught by Osaka, thereby quickly identifying and distinguishing whether two or three-dimensional display control is required during display.

Regarding claims 14 and 15, Swift providing a particular file format that indicates 3D media (col. 3 lines 24-26 and 47-50: "*…a single media file format that is converted to various display formats…the format of the original left and right is…designated by the tag within the…file…*", Fig. 1), however Swift fails to teach analyzing a structure of the multimedia information file to determine whether three-dimensional image data is contained within the file. Osaka teaches a file type determination means for analyzing a structure of said multimedia information file so as to determine whether the multimedia information file includes at least three-dimensional image display control information (col. 17 lines 26-41: "*…whether or not a three-dimensional image is to be displayed has been recorded as information in the header 51 and therefore the decision of step S64 is rendered promptly by making reference to this information…these processing operations may be executed by a file extension…If it is determined at step S64 that this window has a three-dimensional image file…the display driver 6 is controlled to present the three-dimensional display…on the basis of the three-dimensional image data obtained from the three-dimensional image data 52, the screen controller 9 controls the image painting unit 7 and the checkered mask-pattern painting unit 8 and causes a three-dimensional display to be presented at the position of the window of the stereoscopic display 12.*"). The motivation to combine the teachings of Swift with Osaka is equivalent to the motivation of claim 1.

Regarding claim 16, Swift teaches an image data reproduction apparatus (col. 5 lines 21-23: "*…computer 102…used to display…stereo image…*", Fig. 2: element 102) comprising:

reception means for receiving a multimedia information file including three-dimensional image display control information (col. 3 lines 24-26 - 47-50: "*…a…file format…of the original left and right is known, as designated by the tag within the…file…*") obtained by encoding a parameter for displaying three-dimensional image data and said three-dimensional image data, or two-dimensional image data (col. 4 lines 6-11: "*The encoding processes used include independent compression of the Left and Right images. Independent compression of Left and Right provides better quality display output…methods include a video setup format for compression…*" and col. 2 lines 29-31: "*…delivering stereoscopic media in electronic form…object models, etc…*"), a parameter including information data indicating one of a plurality of predetermined camera arrangements of a plurality of cameras which has picked up the three dimensional image data, said one of a plurality of camera arrangements describing a placement of said plurality of cameras relative to each other during image pickup (col. 9 lines 55-62: "*…store a series of N images into a…file…the point of view of the camera is swung around the object to generate…the…images.*", *where a file stores an object imaged from a plurality of relative camera view points that are initialized and saved by the user,* col. 10 lines 52-62: "*Another embodiment allows…views to be generated to simulate a…camera…The amount of adjustment can be selected by the user to suit their viewing condition and capabilities.*", *therefore the file utilizes a camera parameter, in which the placement of the cameras in their relative positions is also provided, as illustrated in* Fig

19: *1908, 1906*), and at least one of information data indicating a method of generating three-dimensional image data from data of the picked up image and information data for controlling presentation of the said three-dimensional image data (col. 9 lines 53-62: "*One embodiment stores a series of 3D stereoscopic images of an object into…a…file…the point of view of the camera is swung around the object to generate all of the intermediate images.*" and in col. 2 lines 28-41: "*The preferred embodiment…provides a single format…to represent the stereoscopic media…it provides a means of displaying stereoscopic media…it provides automatic and manual optimization adjustments such as parallax shift adjustment…to the stereoscopic media based on viewing hardware…for optimal viewing quality.*");

However, Swift fails to teach file type determination. Osaka teaches a file type determination means for analyzing an extension of said multimedia information file where the file type determination means determines, based on the analysis of the extension, whether said multimedia information file includes said three-dimensional image data and determines on which of a plurality of three dimensional display schemes is based (col. 17 lines 23-41: "*…it is determined, based upon the information in the file header 51, whether this window has three-dimensional image data. In this example, whether or not a three-dimensional image is to be displayed has been recorded as information in the header 51 and therefore the decision of step S64 is rendered promptly by making reference to this information…these processing operations may be executed by a file extension…If it is determined at step S64 that this window has a three-dimensional image file…the display driver 6 is controlled to present the three-dimensional display…on the basis of the three-dimensional image data obtained from the three-*

*dimensional image data 52, the screen controller 9 controls the image painting unit 7 and the checkered mask-pattern painting unit 8 and causes a three-dimensional display to be presented at the position of the window of the stereoscopic display 12.*"). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the three-dimensional data file of Swift with the file header information of Osaka because this modification would provide the ability to display stereoscopic images stored in a particular display format on any display device, as taught by Swift, in which the display control processing is reduced through the indication of the presence of three-dimensional data within the file, as taught by Osaka, thereby quickly identifying and distinguishing whether two or three-dimensional display control is required during display.

Regarding claim 20, Swift teaches an image data recording medium having stored thereon information representing a multimedia information file, where the information executed on an image data reproduction apparatus (col. 12 lines 6-17: "*…invention can also be embodied in the form of computer program code, for example…stored in a storage medium, loaded into and/or executed by a computer…wherein, when the computer program code is loaded into and executed by a computer, the computer becomes an apparatus for practicing the invention.*") depicting information including both of three-dimensional image display control information generated by encoding a parameter for displaying three-dimensional image data (col. 4 lines 6-11: "*The encoding processes used include…compression of the Left and Right images.*");

wherein the parameter includes information data indicating a camera arrangement that has picked up said three-dimensional image data (col. 9 lines 55-62: "*…store a*

*series of N images into a...file...the point of view of the camera is swung around the object to generate...the...images.*" and in col. 10 lines 52-62: "*Another embodiment allows...views to be generated to simulate a...camera...The amount of adjustment can be selected by the user to suit their viewing condition and capabilities.*", *where a file stores camera data from each given view used to generated the images*), and information data indicating a method of generating three-dimensional image data from data of the picked up image and information data for controlling presentation of the said three-dimensional image data (col. 9 lines 53-62: "*One embodiment stores a series of 3D stereoscopic images of an object into...a...file...the point of view of the camera is swung around the object to generate all of the intermediate images.*" and in col. 2 lines 28-41: "*The preferred embodiment...provides a single format...to represent the stereoscopic media...it provides a means of displaying stereoscopic media...it provides automatic and manual optimization adjustments such as parallax shift adjustment...to the stereoscopic media based on viewing hardware...for optimal viewing quality.*").

However, Swift fails to teach header control information. Osaka teaches header control information (col. 5 lines 4-11: "*...information indicating whether a three-dimensional display is possible or not is provided in the header of a file...this information is used to decide execution of a three-dimensional display, thereby making it possible to readily decide whether a three-dimensional display is to be executed or not.*", Fig. 12: element 51). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the display control information of Swift with the file header data of Osaka because this combination would provide encoded three-dimensional image data as taught by Swift, in which the three-dimensional data file comprises a

header control data, as taught by Osaka, in which the data processing is reduced through analysis of the header control information which indicates what types of objects the file contains without requiring the entire file to be processed.

Regarding claim 33, Swift teaches an image data recording medium having stored thereon information representing a multimedia information file, where the information executed on an image data reproduction apparatus (col. 12 lines 6-17: "*…invention can also be embodied in the form of computer program code, for example…stored in a storage medium, loaded into and/or executed by a computer…wherein, when the computer program code is loaded into and executed by a computer, the computer becomes an apparatus for practicing the invention.*"), depicting information including three-dimensional image display control information (col. 3 lines 24-26 - 47-50: "*…a…file format…of the original left and right is known, as designated by the tag within the…file…*"), generated by encoding a parameter for displaying three-dimensional image data (col. 4 lines 6-11: "*The encoding processes used include independent compression of the Left and Right images. Independent compression of Left and Right provides better quality display output…methods include a video setup format for compression…Several tools are used in the process. These include…a stereo compression analysis tool to detect if the stereo information is preserved after compression.*") and said three-dimensional image data (col. 11 lines 12-16: "*If too much compression is applied, the image will loose its stereoscopic impact. This embodiment provides a measure of the quality of the stereoscopic image that can be used to readjust the compression system.*");

wherein the parameter including information data indicating one of a plurality of predetermined camera arrangements of a plurality of cameras which has picked up the

three dimensional image data, said one of a plurality of camera arrangements describing a placement of said plurality of cameras relative to each other during image pickup (col. 9 lines 55-62: "*…store a series of N images into a…file…the point of view of the camera is swung around the object to generate…the…images.*", *where a file stores an object imaged from a plurality of relative camera view points that are initialized and saved by the user,* col. 10 lines 52-62: "*Another embodiment allows…views to be generated to simulate a…camera…The amount of adjustment can be selected by the user to suit their viewing condition and capabilities.*", *therefore the file utilizes a camera parameter, in which the placement of the cameras in their relative positions is also provided, as illustrated in* Fig 19: *1908, 1906*), and information data indicating a method of generating three-dimensional image data from data of the picked up image and information data for controlling presentation of the said three-dimensional image data (col. 9 lines 53-62: "*One embodiment stores a series of 3D stereoscopic images of an object into…a…file…the point of view of the camera is swung around the object to generate all of the intermediate images.*" and in col. 2 lines 28-41: "*The preferred embodiment…provides a single format…to represent the stereoscopic media…it provides a means of displaying stereoscopic media…it provides automatic and manual optimization adjustments such as parallax shift adjustment…to the stereoscopic media based on viewing hardware…for optimal viewing quality.*");

the recording area further including an image recording area for recording three-dimensional image data (col. 2 lines 21-25: "*This invention presents new stereoscopic media delivery system that includes means for…storing stereoscopic media…*", Fig. 1: element 12), an audio recording area for recording audio data (col. 8 lines 10-23: "*…a*

*file structure is created to store and preserve various types of stereo media in various formats…this file format can also store…audio…*"), and a sub code area for recording associated information, which has been interpreted to be any fragment or portion of data storage in the file containing data such as video or audio (col. 8 lines 10-23: "*A stereo media file format may contain certain sub media…An embodiment supports a stereoscopic media file that contains sub-media…this file format can also store monoscopic media, as well as audio or other data. This one file format can store multiple or single stereo/non-stereo media elements. FIG. 10 illustrates a VRR file 1000 that may contain a script 1002, a Stereo Still Image 1004, a Stereoscopic Animation/movie 1006, Stereoscopic Object Model 1008, a Thumbnail 1010, and Audio 1012.*");

However, Swift fails to teach a recording area comprising information regarding a time code. Osaka teaches storing information regarding a time code for the image data (col. 20 lines 61-67 – col. 21 lines 1-5: "*…image data is read out of the…image file…images are displayed continuously several viewpoints at a time…by the crossed-lenticular scheme…*" and in col. 13 lines 16-18: "*…images are displayed in time-division fashion…*", *where images are continuously displayed at particular times, therefore the system implicitly stores time instances or time codes related to teach image within a portion of the data memory storage space in order to correctly provide the images to the user*). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the three-dimensional image data file taught by Swift with the sub code time information taught by Osaka because this modification would provide encoded three-dimensional image data as taught by Swift, in which the three-dimensional data file

comprises time data, as taught by Osaka, where image data is improved through synchronization of time instances for the displayed images thereby preserving the three-dimensional data.

Regarding claim 34, Swift illustrates information that when executed, records at least a portion of said three-dimensional image display control information in the image recording area (Fig. 1), where a portion of the display control information (14, 16, 18, 20, 22, 24, 26) is recorded in the media file (12).

Regarding claim 35, Swift teaches information that when executed, records at least a portion of said three-dimensional image display control information in the audio recording area (col. 8 lines 10-23: "*A stereo media file format may contain certain sub media…An embodiment supports a stereoscopic media file that contains sub-media…this file format can also store monoscopic media, as well as audio or other data.*"), where any media data within the stereo file (Fig. 1: element 12), may be stored with the audio therefore the audio file may contain video or display control information.

Regarding claim 36, Swift teaches information that when executed, records at least a portion of said three-dimensional image display control information in the sub code area (col. 8 lines 10-23: "*A stereo media file format may contain certain sub media…An embodiment supports a stereoscopic media file that contains sub-media…this file format can also store monoscopic media, as well as audio or other data. This one file format can store multiple or single stereo/non-stereo media elements. FIG. 10 illustrates a VRR file 1000 that may contain a script 1002, a Stereo Still Image 1004, a Stereoscopic Animation/movie 1006, Stereoscopic Object Model 1008, a Thumbnail 1010, and Audio*

*1012.*"), where any media data may be stored with the sub media, therefore the sub media file may contain video or display control information.

Regarding claims 37, 39, 41, 43 and 45, Swift teaches information data indicating one of a plurality of camera arrangements describes at least one of a spatial relation between the plurality of cameras that has picked up said three-dimensional image data (col. 10 lines 62-63: "*…right 1902 and left 1904 camera views of an object 1900.*" *and is shown in* Fig. 19: *1906, 1908*).

Regarding claims 38, 40, 42, 44 and 46, Swift teaches that the information data indicating one of a plurality of camera arrangements is one of an annular arrangement (Fig. 19: *1906, 1908, wherein the cameras are arrangement in a curved annular manner*).

Claims 4, 13, 17 and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Swift in view of Osaka, in further view of Connell (US Patent 5,581,625) and in further view of Harman (US Patent 6,496,598).

Regarding claims 4, 13, 17 and 21, Swift teaches three-dimensional image display control information (Fig. 1: element 10), including information indicating a number of viewpoints of the three-dimensional image data and information indicating from which viewpoint position the three-dimensional image data is obtained (col. 9 lines 53-62: "*One embodiment stores a series of 3D stereoscopic images of an object into one file. FIG. 16 illustrates one way to store a series of N images into a single resource file. The first image 1600 is at the top of the file and the rest of the images follow sequentially until the last file 1602…the point of view of the camera is swung around the object to generate all*

*of the intermediate images.*", Fig. 17). Swift also teaches indicating a maximum shift amount when a parallax image of three-dimensional data is shifted (col. 8 lines 51-63: "*…automatically (or manually if desired) adjusts with overall left and right image shift to compensate for image magnification. When a 3D stereoscopic image is enlarged…there is a potential of creating large separations between objects in the 3D stereoscopic image that can lead to eyestrain for the viewer. The present invention stores important parameters about the 3D stereoscopic image like width, height, target screen size, etc. When the 3D stereoscopic image is to be displayed on a display that is larger or smaller than the target screen size, then the 3D stereoscopic image is adjusted accordingly to minimize eye fatigue for the user.*"), where the shift of the image is performed until it reaches a position in which if shifted further, the three-dimensional depth would not be preserved. However, Swift fails to teach identification of three-dimensional data within a multimedia information file. Osaka teaches identification of three-dimensional data within a multimedia information file (col. 17 lines 23-26: "*…it is determined, based upon the information in the file header 51, whether this window has three-dimensional image data…*"). Swift and Osaka fail to teach a direction of sub-sampling three-dimensional data. Connell teaches a direction of sub-sampling three-dimensional data (col. 7 lines 18-25: "*The combined stereo video signal is then fed to computer 52, which digitizes same, separates the left and right images and subsamples each to obtain two compressed…images (100 pixels across and 65 up and down). Prior to subsampling or compression, the combined image is 512 by 512 pixels (each half image is 512 pixels across and 256 up and down). Compression extracts, for example, every fifth pixel across and up and down…*"). However, Swift, Osaka and Connell fail to

teach indicating whether a border is to be display around and image, and an identification of three-dimensional data within a multimedia information file. Harman teaches indicating whether a border is to be displayed around an image of said three-dimensional image data (col. 6 lines 45-51: "*The processes would then work in either real-time or non real-time in order to create the 3D images. This can be further optimised through the use of borders…The 3D images may then be stored or transmitted to a 3D display, including shutterglasses, polarising glasses or an autostereoscopic display.*"), and indicating border image data to be displayed around the image of said three-dimensional image data (col. 14 lines 4-20: "*The present invention therefore preferably also defines a common border or reference point within a viewed image…This has the advantage of enhancing the stereoscopic effect in many scenes. This reference point can be a simple video border or…i) A simple coloured video border around the perimeter of the image. ii) A complex coloured video border consisting of two or more concentric borders…*"). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the stored three-dimensional data of Swift, with the file header data of Osaka and sub-sampling display properties of Connell, with the optimized three-dimensional border display parameters of Harman because this combination would provide an accurate display of stereoscopic image data that has been analyzed to determine the three-dimensional data to be displayed, in which adjustment through shifting and modifications to the image data using borders based on the determined display information enables preservation of the stereoscopic effect.

Claims 10, 18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swift in view of Osaka in further view of Tanaka (US Patent 6,233,004).

Regarding claims 10, 18 and 25, Swift teaches an image data generation apparatus (col. 5 lines 21-23: "*…computer 102…used to display…stereo image…*") comprising:

a file generation unit for generating a multimedia information file including both of image pick-up condition information indicating an image pick-up condition for a three-dimensional image (col. 10 lines 53-54: "*…embodiment allows new right and left image views to be generated to simulate…stereoscopic camera separation.*", *therefore the apparatus contains one or more equivalent generation units that would execute the method of generating the images stored on a computer-readable medium*), a multimedia information file that contains three-dimensional image data (col. 2 lines 29-31: "*…delivering stereoscopic media in electronic form…object models, etc…*");

wherein both the pick-up condition, which provides information regarding image data related to images for the left and right eyes, and three-dimensional image data are encoded in a parameter stored in the file (col. 9 lines 53-62: "*One embodiment stores a series of 3D stereoscopic images of an object into one file…the images follow sequentially until the last file 1602…the point of view of the camera is swung around the object to generate…the…images.*" and in col. 4 lines 6-11: "*The encoding processes used include independent compression of the Left and Right images. Independent compression of Left and Right provides better quality display output…methods include a video setup format for compression…Several tools are used…These include…a stereo compression analysis tool to detect if the stereo information is preserved after compression.*").

However, Swift fails to teach header control information and image pick-up information including information indicating a number of parallaxes in a horizontal direction and perpendicular thereto. Osaka teaches header control information (col. 5 lines 4-11: "*…to provide a display control apparatus and a display control method in which paint information indicating whether a three-dimensional display is possible or not is provided in the header of a file…*", Fig. 12: element 51).

However, Swift and Osaka fail to teach image pick-up information including information indicating a number of parallaxes in a horizontal direction and perpendicular thereto. Tanaka teaches image pick-up information indicating a number of parallaxes, or viewpoints, in a horizontal direction and a direction perpendicular thereto, which is therefore in a vertical direction (col. 4 lines 26-31 and 45-47: "*…the aforesaid plurality of cameras 22 pick up images of the object 21, and the plurality of cameras…are arranged in both the vertical and horizontal directions on a plane apart from the object 21 at a predetermined distance…*"). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the three-dimensional data of Swift and file header display control information of Osaka with the parallax display properties of Tanaka because this combination would provide accurate display of stereoscopic images through the analysis of the placement of several viewpoints required to display three-dimensional images correctly thereby preserving the depth and reducing visual discomfort experienced while viewing the images.

Claims 11, 19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swift in view of Osaka in further view of Uomori et al. (hereinafter "Uomori", US Patent 6,005,607).

Regarding claims 11, 19 and 26, Swift teaches an image data generation apparatus (col. 5 lines 21-23: "*…computer 102…used to display...stereo image…*") comprising:

a file generation unit for generating a multimedia information file including both of image pick-up condition information indicating an image pick-up condition for a three-dimensional image (col. 9 lines 53-62: "*One embodiment stores a series of 3D stereoscopic images of an object into one file...to store a series of N images into a single resource file. The first image 1600 is at the top of the file and the rest of the images follow sequentially until the last file 1602...the point of view of the camera is swung around the object to generate all of the intermediate images.*" and in col. 10 lines 52-65: "*…embodiment allows...image views to be generated to simulate a...camera...*", *therefore the apparatus contains one or more equivalent generation units that would execute the method of generating the images stored on a computer-readable medium*), and also teaches a file that contains three-dimensional image data (col. 2 lines 29-31: "*…delivering stereoscopic media in electronic form...object models, etc…*");

wherein both the pick-up condition, which provides information regarding image data related to images for the left and right eyes, and three-dimensional image data are encoded in a parameter stored in the file (col. 9 lines 53-62: "*One embodiment stores a series of 3D stereoscopic images of an object into one file...the images follow sequentially until the last file 1602...the point of view of the camera is swung around the object to generate...the...images.*" and in col. 4 lines 6-11: "*The encoding processes used*

*include independent compression of the Left and Right images. Independent compression of Left and Right provides better quality display output…methods include a video setup format for compression…Several tools are used…These include…a stereo compression analysis tool to detect if the stereo information is preserved after compression.*"), and

wherein said image pick-up condition information includes at least one of information indicating one of a plurality of predetermined camera arrangement shapes formed by a plurality of cameras which has picked up said three-dimensional image data (col. 9 lines 55-62: "*…store a series of N images into a…file…the point of view of the camera is swung around the object to generate…the…images.*", col. 10 lines 52-62: "*Another embodiment allows…views to be generated to simulate a…camera…The amount of adjustment can be selected by the user to suit their viewing condition and capabilities.*", *as illustrated in* Fig 19: *1906, 1908, in which a plurality of predetermined camera arrangements are provided for acquiring three-dimensional image data from the plurality of cameras*), information indicating a camera arrangement shape indicating an interval between adjacent cameras of the plurality of cameras which has picked up said three-dimensional image data (col. 10 lines 52-65: "*…embodiment allows…image views to be generated to simulate a…camera…and…can be used to simulate a wider stereoscopic camera…*", Fig. 19).

However, Swift fails to teach header control information and information indicating a distance from a camera arrangement plane formed by the plurality of cameras which has picked up said three-dimensional image data to a convergence point formed by the view axes of said plurality of cameras. Osaka teaches header control information (col. 5 lines 4-11: "*…to provide a display control apparatus and a display*

*control method in which paint information indicating whether a three-dimensional display is possible or not is provided in the header of a file…*", Fig. 12: element 51).

However, Swift and Osaka fail to teach indicating a distance from a camera arrangement plane formed by the plurality of cameras which has picked up said three-dimensional image data to a convergence point formed by the view axes of said plurality of cameras. Uomori teaches indicating a distance from a camera arrangement plane formed by the plurality of cameras which has picked up said three-dimensional image data to a convergence point formed by the view axes of said plurality of cameras, which is comprised in camera parameter information (col. 5 lines 24-31: "*…the fusional range verification section 11 calculates…the camera parameters…distance dx from camera converging point to imaginary camera position V…*", *and is shown in* Fig. 2: *dx, where the view axes of the plurality of camera positions converge to the convergence point*), therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the three-dimensional data of Swift and file header display control information of Osaka, with the parallax camera arrangement properties of Uomori because this modification would provide visually appealing stereoscopic images through accurate adjustment of the parallax and viewpoints of the image acquisition devices with respect to calculated distances from the device to a convergence point.

**Response to Arguments**

Applicant's arguments with respect to claims 1-4, 6, 7, 10-21, 23-26 and 33-46 have been considered but are moot in view of the new ground(s) of rejection.

The objection to the Specification has been withdrawn due to the amendments to the tile of the application.

The 35 U.S.C. 101 rejection of claims 20, 21, 23-26 and 33-36 has been withdrawn due to the amendments to the specification to remove reference to the "transmission media".

The applicant argues on pg. 18 3rd ¶ line 1 - 4th ¶ line 2 and on pg. 20 1st ¶ lines 1-6 of the remarks that Swift nor Osaka teach the limitations of claims 1, however Swift and Osaka's teaching of the limitations of claim 1 are provided in the above office action, therefore the 35 U.S.C. 103(a) rejection of claim 1 has been maintained.

The applicant argues on pg. 19 2nd ¶ lines 3-12 and in the 4th ¶ lines 1-3 of the remarks that Swift teaches a "tag" for displaying three-dimensional image data and cannot indicate one of a plurality of predetermined camera arrangements of a plurality of camera which has picked up said three-dimensional image data, in which no mention of the arrangement of the cameras is to be found in Swift. However, Swift provides teaching of the a plurality of predetermined camera arrangements of a plurality of camera which has picked up said three-dimensional image data (col. 10 lines 62-63: "*…right 1902 and left 1904 camera views of an object 1900.*" *and is shown in* Fig. 19: *1906, 1908*), where the arrangement of a plurality of cameras, as shown in Fig. 19, is thereby provided.

The applicant argues on pg. 19 3rd ¶ lines 2-9 of the remarks that a camera arrangement is not expressly disclosed by Swift, and that the presence of a right and left channel is not a parameter including information data indicating one of a plurality of predetermined camera arrangements. However, Swift provides arrangement of a plurality of cameras to acquire image data (col. 10 lines 62-63: "*…right 1902 and left 1904*

*camera views of an object 1900.*" *and is shown in* Fig. 19: *1906, 1908, where the positional parameters of a camera arrangement is provided*), therefore Swift indicates camera parameters that describes the arrangement to enable the image acquisition.

The applicant argues on pg. 20 3rd ¶ lines 1-6 of the remarks that, in regards to claim 7, Swift nor Osaka references teach or suggest a file extension which indicates which of a plurality of different three-dimensional display methods is used to display said three-dimensional image data. However, Osaka not only provide an extension which describes whether three-dimensional image data is displayed, but also indicates the manner in which to display the three-dimensional image data, such as in a checkered pattern (col. 17 lines 26-41: "*…whether or not a three-dimensional image is to be displayed has been recorded as information in the header 51 and…may be executed by a file extension…If it is determined at step S64 that this window has a three-dimensional image file…display driver 6 is controlled to present the three-dimensional display…on the basis of the three-dimensional image data obtained from the three-dimensional image data 52, the screen controller 9 controls the image painting unit 7 and the checkered mask-pattern painting unit 8 and causes a three-dimensional display to be presented at the position of the window of the stereoscopic display 12.*").

The applicant argues on pg. 20 4th ¶ line 1 - pg. 21 1st ¶ line of the remarks that Swift nor Osaka teach the limitations of claims 10, 18 and 25, however Swift and Osaka's teaching of the limitations of claims 10, 18 and 25 are provided in the above office action, therefore the 35 U.S.C. 103(a) rejection of claims 10, 18 and 25 has been maintained.

The applicant argues on pg. 21 3rd ¶ lines 6-14 of the remarks that Swift does not teach or suggest including information in a parameter regarding any number of viewpoints other than the inherent left and right channel, and one of ordinary skill in the art would not have sufficient rationale to modify Swift to encode a parameter indicating the number of parallaxes in a first direction and/or a second direction into the multimedia file. However, Swift teaches including information regarding left and right channel parameters, as admitted by the applicant on pg. 21 3rd ¶ lines 6-7 of the remarks, which thereby indicates first and second parallax directions for the left and right eyes of the observer.

The applicant argues on pg. 22 4th ¶ lines 1-9 of the remarks that Swift teaches a "tag" for displaying three-dimensional image data and provides no mention of the arrangements of cameras se dot pick up the three-dimensional data. However, Swift provides teaching of the a plurality of predetermined camera arrangements of a plurality of camera which has picked up said three-dimensional image data (col. 10 lines 62-63: "*…right 1902 and left 1904 camera views of an object 1900.*" *and is shown in* Fig. 19: *1906, 1908*), where the arrangement of a plurality of cameras, as shown in Fig. 19, is thereby provided.

The applicant argues on pg. 23 1st ¶ lines 6-8 of the remarks that Swift does not include information regarding the interval between adjacent cameras of the plurality of cameras which acquired the image data. However, Swift provides data describing the interval between adjacent cameras of the plurality of cameras which acquired the image data (col. 10 lines 52-65: "*…embodiment allows…image views to be generated to simulate a…camera…and…can be used to simulate a wider stereoscopic camera…*" *and*

*is shown in* Fig. 19), wherein the distance between each given camera position is set to form the camera image acquisition arrangement of Fig. 19.

The applicant argues on pg. 23 2nd ¶ lines 8-10 of the remarks that in regards to claims 11, 19 and 26, Uomori fails to teach or suggest that information regarding a distance to a convergence point formed by the view axes of a plurality of cameras which picked-up three-dimensional image data is encoded as a parameter and included in a multimedia file. However, Uomori provides information regarding a distance to a convergence point formed by the view axes of a plurality of cameras which picked-up three-dimensional image data (col. 5 lines 24-31: "*…the fusional range verification section 11 calculates…the camera parameters… distance dx from camera converging point to imaginary camera position V…*", *and is shown in* Fig. 2: *dx, where the view axes of the plurality of camera positions converge to the convergence point*), in which Swift teaches encoding camera parameters in a multimedia file (col. 4 lines 6-11: "*The encoding processes used include independent compression of the Left and Right images. Independent compression of Left and Right provides better quality display output…methods include a video setup format for compression…Several tools are used…These include…a stereo compression analysis tool to detect if the stereo information is preserved after compression.*" and in col. 11 lines 12-16: "*If too much compression is applied, the image will loose its stereoscopic impact. This embodiment provides a measure of the quality of the stereoscopic image that can be used to readjust the compression system.*", *where a parameter, or stereo information, that provides information regarding how to correctly display and align the stereoscopic images form corresponding left/right points of view, is encoded in the file*), in which it would have

been obvious to one of ordinary skill in the art at the time of invention to modify the encoded camera parameters of Swift with the convergence point distance calculation of Uomori because this modification would provide efficient storage of camera parameter information within one multimedia file, thereby ensuring visually appealing stereoscopic images are provided through accurate storage of the camera parallax and viewpoints of the image acquisition devices with respect to calculated distances from the device to a convergence point to provide efficient stereoscopic imagery to an observer.

## *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAID BROOME whose telephone number is (571)272-2931. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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